



Well Source Approval Guidance For Group A Public Water Systems

331-674 • 10/6/2021

Adding a new source of water supply to a public water system requires approval by Washington Department of Health (DOH) Office of Drinking Water. WAC 246-290-130(1) states:

Every purveyor shall obtain drinking water from the highest quality source feasible. No new source, previously unapproved source, or modification of an existing source shall be used as a public water supply without department approval. No intake or other connection shall be maintained between a public water system and a source of water not approved by the department.

For Group B public drinking water supplies, you will find guidance on obtaining DOH approval for using a ground water source in the [Group B Water System Design Guidelines 331-467](#) and [Group B Design Workbook 331-468](#). Please note that your local health jurisdiction may have responsibility to approve Group B drinking water supplies; check with them if you're unsure.

This guidance document intends to assist public water systems in gaining DOH source approval for adding a ground water well to a Group A public drinking water system. We want to alert you to some of the more important steps in the process and give you a general outline for the completion order, and provide you with forms and other resources so that you can efficiently complete the process.

The drinking water regulations specific to source approval are found in WAC 246-290-130. Our [Water System Design Manual 331-123](#) contains guidance on designing public water system sources in Chapter 5, checklists for the source approval package and construction document submittals in Appendix A.3.2, and guidance on conducting pump tests in Appendix E.

Converting an existing well for use in a public water system is possible if the well meets the same sanitary control area requirements as a newly drilled well would. There must also be enough information available about the construction details and current condition of the well and casing from well logs and a video log. Existing wells need to meet all source approval requirements in WAC 246-290-130.

Below is a recommended typical sequence of steps to pursue approval of your planned water supply.

Hire a licensed professional engineer

You are required to hire a professional engineer (PE), licensed in Washington State, to prepare and submit the source approval documents and associated construction documents. The submittals must bear the PE's stamp and signature. It is a good idea to bring on the PE as early as possible in the project so they can help make good design decisions and start the project off correctly.

If the needed pumping rate of the new well has not been determined through some other process such as a water system planning document, have your PE provide analysis and calculations that identify the needed pumping rate. That analysis along with documentation such as water rights and the well site inspection needs to be included with the source approval documents as described below.

Assemble water right documents

Unless the new well falls under the water rights exemption (discuss this with Washington Department of Ecology [Ecology] or visit their [Groundwater Permit Exemption website](#)). You must provide Ecology documentation that permits the planned withdrawal. This documentation must include a [Water Rights Self-Assessment Form 331-372](#). If you are claiming that the well is permit exempt, you must provide documentation of water system usage demands to demonstrate that permit exemption criteria are met.

Well site inspection

Schedule a well site inspection with your local health jurisdiction (LHJ) or DOH before drilling your well. Most LHJs contract with DOH to conduct well site inspections. The well site inspection identifies any potential contaminant sources (existing or planned) that are near the proposed well. See the [Sanitary Control Area Protection 331-453](#) regarding keeping the sanitary control area around the well free of potential sources of contamination. If the well is drilled before the well site is approved, DOH is under no obligation to approve the new well as a public water supply.

Drill the well and conduct testing

The [Water System Design Manual 331-123](#) explains the required water quality testing in Section 5.1.1, and it provides guidance for pump testing in Appendix E. We recommend that you collect the needed water quality samples at the end of the pump test, to assure a representative sampling of the aquifer water quality.

Complete the source approval documents package

In addition to the above items, complete all other documentation necessary (see the checklist in Appendix A.3.2 of the [Water System Design Manual 331-123](#)). Other documents needed to complete the source approval package include:

- ◆ [Susceptibility Assessment Form 331-274-F](#) and instructions (see Appendix F of the [Wellhead Protection Program Guidance Document 331-018](#)). For more information on source water protection, see Section 5.2 in the [Water System Design Manual 331-123](#), and also see our [Source Water Protection webpage](#).
- ◆ [Covenants for Public Water Supply Protection 331-048](#)—a fact sheet that explains how to establish land use protection for the sanitary control area of the well.
- ◆ Template forms for *Declaration of Covenant* and *Restrictive Covenant*—included as attachments to this guidance document

- The source approval documentation needs to include an evaluation of the corrosion potential of the new source's water quality on the system, or alternatively the system's lead and copper sampling may be reset to initial monitoring.

Design infrastructure improvements

Design construction documents for all improvements associated with the new well; including pipes, valves, controls, treatment (if necessary), buildings, and the like (see the checklist in Appendix A.3.2 of the [Water System Design Manual 331-123](#)). Please reference [Water Systems Council Standard PAS-97 \(2019\)](#) in selecting the pitless unit and well cap. Include specifications for the disinfection and testing once construction of the new facilities is complete.

Submit source approval and construction documents

Submit a [Project Approval Application Form 331-149](#) and source documents package under the stamp and signature of the PE to DOH for written approval. DOH will forward the water rights portion of your submittal to Ecology for their review and comment.

After obtaining approval, begin construction of well improvements

Before starting construction on the physical improvements needed to connect the well to the water system and make it operational, you need to have received written DOH approval of construction documents. This is required by WAC 246-290-120(2).

Submit the construction completion report and revise water facilities inventory

Upon completing construction of the new source infrastructure, but prior to use, submit to us a [Construction Completion Report 331-121](#) and an updated water facilities inventory with the new well and any other relevant updates.

If you have any questions or need additional information, feel free to contact your DOH Regional Engineer, see our [staff contact information web page](#).

For more information

Our publications are online at doh.wa.gov/drinkingwater.

Contact our nearest regional office from 8 AM to 5 PM, Monday through Friday. If you have an after-hours emergency, call 877-481-4901.

[Eastern Region](#), Spokane Valley 509-329-2100.

[Northwest Region](#), Kent 253-395-6750.

[Southwest Region](#), Tumwater 360-236-3030.



To request this document in another format, call 1-800-525-0127. Deaf or hard of hearing customers, please call 711 (Washington Relay) or email civil.rights@doh.wa.gov.

Attachments

Attachment 1: Source Approval Checklist from Appendix A.3.2 of the [Water System Design Manual 331-123](#).

Appendix A.3.2 Groundwater Source of Supply Checklist

Address these design elements in source of supply project report and construction document submittals. Refer to Chapter 5, WAC 246-290-130 and -135, and Appendix E for further design guidance and requirements. If the new groundwater source requires treatment, refer to Appendix A.3.8.

The following guidance also applies to sources serving existing, unapproved water systems. If the source is an existing well the project proposes to convert into an "approved" water source, the water system or engineer should inform the DOH engineer about any DOH-requested information that is not available (such as a missing well log).

For new surface water supplies, contact your regional engineer for further guidance. Applicable design references include Chapters 5, 10, and 11, and Appendix A.3.8.

Project Report

- ☐ Source of supply analysis that justifies the need for a new or expanded source of supply and the alternative source options evaluated.
- ☐ Water right permit or certificate issued by the Department of Ecology plus a completed Water Right Self-Assessment Form.
- ☐ Copies of legal documents (easements or covenants) for the sanitary control area (WAC 246-290-135). See [DOH 331-453](#) and [DOH 331-048](#).
- ☐ Water quality test results for each source, including:
 - Bacteriological/coliform test (bacti/coli)
 - Inorganic chemical and physical analysis (IOC)
 - Volatile organic chemical (VOC) test
 - Radionuclide test (only required for community water systems)
 - Synthetic organic chemical (SOC) tests, unless demonstrated that source can meet DOH's requirements for a monitoring waiver
 - Results of any other tests required due to site-specific concerns
- ☐ Assess potential effects of the new source of supply on water quality in the distribution system, especially with respect to corrosion and compliance with the Lead and Copper Rule (WAC 246-290-110(4)(d)).
- ☐ Assess adequacy of each reservoir overflow capacity to safely discharge the total possible flow to the reservoir (all sources, booster pump station discharges and flow

through PRVs) to ensure the structural integrity of each reservoir in the event of control system failure.

- ☐ Well site inspection that DOH or the local health jurisdiction did.
- ☐ Susceptibility assessment, wellhead protection area (WHPA) delineation, and contaminant inventory within the WHPA (WAC 246-290-130 and -135). See DOH 331-274-F.
- ☐ Update the Wellhead Protection Plan (WHPP). See [DOH 331-018](#) and [331-106](#).
- ☐ Well log including unique well identification tag number, surface seal, depth to open
- ☐ interval or top of screened interval, overall depth from well the top of the casing, and elevation of top of casing.
- ☐ DOH well pumping test results following procedures in Appendix E.
- ☐ Source pump control logic and pump cycle protection. Chapter 9 has pressure tank sizing requirements and Chapter 7 has appropriate pump control levels for reservoirs.
- ☐ Alarm conditions.
- ☐ Given the triggers for mandatory CT6 and 4-log virus inactivation treatment of groundwater sources (see WAC 246-290-451 and -453, respectively) after being placed into operation, we believe it is advantageous to assess and, given construction cost and other constraints, design and install facilities capable of providing 4-log virus inactivation treatment prior to the first connection at each new groundwater source. Submit such assessment. See Appendix F.1 for hypochlorination submittal outline.
- ☐ Report on the evaluation of a potential groundwater under the direct influence of surface water source. See WAC 246-290-135.
- ☐ Natural and geotechnical hazards analysis of the well site and well house building.

Construction Documents

- ☐ Site piping plans including:
 - Source meter set according to manufacturer's minimum required upstream and downstream pipe configuration.
 - Valves (i.e., isolation, check, well pump control, air/vacuum, pressure relief). Show screen secured on each valve discharge outlet.
 - Sample taps for raw and finished water.
 - Location, size, type and class of pipe.
- ☐ Pumping equipment specifications including:
 - Horsepower, GPM, head, pump controls, and alarm system.
 - Specific pump curve being used, and operation range of head and flow conditions clearly indicated on pump curve.

- Narrative discussion of ability of the source and pumping system to supply peak daily water volumes.
- ☐ Well construction details, including general design and construction standards, casing specifications, general sealing requirements and material specifications, adequately sized and screened inverted well casing vent constructed to prevent entry of contaminants, and access port for measuring water level. See Policy M.01 for information on pitless units and well caps.
- ☐ Map of the site and vicinity drawn to scale, including well location (township, range, and latitude-longitude), pump house, water lines, site topography, sanitary protection area, and location of potential sources of contamination including septic systems, sanitary sewers, buildings, roads, and driveways.
- ☐ Well house details including security measures, casing and pump house slab elevations, ventilation, room for future disinfection equipment if and when it's needed (if not currently being designed), and electrical connections allowing the use of emergency power.
- ☐ Building equipment and instrument layout demonstrating adequate clearance to safely enter, operate, and maintain all well house components.

Attachment 2: DOH Source Approval Water Quality Sampling Requirements

Washington DOH Water Quality Monitoring Requirements for Source Approval

Group A-TNC	Group A-NTNC	Group A Community
Satisfactory coli	Satisfactory coli	Satisfactory coli
Complete IOC	Complete IOC	Complete IOC
Complete VOC	Complete VOC	Complete VOC
	Herbicide	Herbicide
	General pesticides	General pesticides
	Fumigants*	Fumigants*
		Radionuclides**

Note: Collect source approval water quality samples after the well has been pumped extensively enough that the water being pumped is representative of the aquifer. We recommend that these samples be collected at the end of the pump test. We also recommend that you deliver the samples to the lab on the same day they were collected. If that is not feasible, be sure to meet all sample preservation and hold time requirements.

**Fumigants are required for all new sources in Adams, Benton, Franklin, Grant and Walla Walla Counties.*

***Radionuclide monitoring is gross alpha and radium 228 – if gross alpha + radium 228 is greater than 5 pCi/L, the system must test for radium 226; if gross alpha + radium 228 is greater than 15 pCi/L, the system must also test for radium 226 and uranium. If the system has another source with a history of high results of radionuclide constituents, we recommend that the sample from the proposed new source be analyzed for the particular radionuclide constituent that were elevated in the other well.*

Attachment 3: Template Declaration of Covenant and Restrictive Covenant Forms

Return Address:

DECLARATION OF COVENANT

I (we) the undersigned, owner(s) in fee simple of the land described herein, hereby declare this covenant and place same on record.

I (we) the grantor(s) herein, am (are) the owner(s) in fee simple of (an interest in) the following described real estate situated in _____ County, State of Washington; to wit:

on which the grantor(s) owns and operates a well and waterworks supplying water for public use located on said real estate, at:

and grantor(s) is (are) required to keep the water supplied from said well free from impurities which might be injurious to the public health.

It is the purpose of these grants and covenants to prevent certain practices hereinafter enumerated in the use of said grantor(s) water supply.

NOW, THEREFORE, the grantor(s) agree(s) and covenant(s) that said grantor(s), his (her) (their) heirs, successors and assigns will not construct, maintain, or suffer to be constructed or maintained upon the said land of the grantor(s) and within 100 (One Hundred) feet of the well herein described, so long as the same is operated to furnish water for public consumption, any potential source of contamination, such as septic tanks and drainfields, sewerlines, underground storage tanks, roads, railroad tracks, vehicles, structures, barns, feed stations, grazing animals, enclosures for maintaining fowl or animal manure, liquid or dry chemical storage, herbicides, insecticides, hazardous waste, or garbage of any kind or description.

These covenants shall run with the land and shall be binding to all parties having or acquiring any right, title, or interest in the land described herein or any part thereof, and shall inure to the benefit of each owner thereof.

WITNESS _____ hand _____ this _____ day of _____, 19____.

_____(Seal)

_____(Seal)

Grantor(s)

State of Washington)

County of _____)

I, the undersigned, a Notary Public in and for the above named County and State, do hereby certify that on this _____ day of _____, 19____, personally appeared before me _____ to me known to be the individual described in and who executed the within instrument, and acknowledge that he (they) signed and sealed the same as free and voluntary act and deed, for the uses and purposes therein mentioned.

GIVEN under my hand and official seal the day and year last above written.

Notary Public in and for the State of Washington, residing at _____

My Commission Expires: _____

Return Address:

RESTRICTIVE COVENANT

The grantor(s) herein is (are) the owner(s) of (an interest in) the following described real estate situated in _____ County, State of Washington:

The grantee(s) herein, own(s) and operate(s) a well and waterworks supplying water for public use, located upon the following described real estate situated in _____ County, State of Washington:

which well and waterworks are in close proximity to the land of the grantor(s), and said grantee(s) is (are) required to keep the water supplied from said well free from impurities which might be injurious to the public health.

It is the purpose of these grants and covenants to prevent certain practices hereinafter enumerated in the use of the said grantor(s) land which might contaminate said water supply.

NOW, THEREFORE, the grantor(s) agree(s) and covenant(s) with said grantee(s), its successors and assigns, said covenants to run with the land for the benefit of the land of the grantee(s), that said grantor(s), his (her) (their) heirs, successors and assigns will not construct, maintain, or suffer to be constructed or maintained upon the said land of the grantor(s) and within 100 (One Hundred) feet of the well herein described, so long as the same is operated to furnish water for public consumption, any potential source of contamination, such as septic tanks and drainfields, sewerlines, underground storage tanks, roads, railroad tracks, vehicles, structures, barns, feed stations, grazing animals, enclosures for maintaining fowl or animal manure, liquid or dry chemical storage, herbicides, insecticides, hazardous waste, or garbage of any kind or description.

These covenants shall run with the land and shall be binding to all parties having or acquiring any right, title, or interest in the land described herein or any part thereof, and shall inure to the benefit of each owner thereof.

WITNESS _____ hand _____ this _____ day of _____, 19____.

_____(Seal)

_____(Seal)

Grantor(s)

State of Washington)

County of _____)

I, the undersigned, a Notary Public in and for the above named County and State, do hereby certify that on this _____ day of _____, 19____, personally appeared before me _____ to me known to be the individual(s) described in and who executed the within instrument, and acknowledge that he (she) (they) signed and sealed the same as free and voluntary act and deed, for the uses and purposes therein mentioned.

GIVEN under my hand and official seal the day and year last above written.

Notary Public in and for the State of Washington, residing at _____

My Commission Expires: _____